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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,345	01/23/2004	Andrew L. Van Brocklin	200315613	7076

22879 7590 02/14/2007

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FORT COLLINS, CO 80527-2400

EXAMINER

NGUYEN, DAO H

ART UNIT	PAPER NUMBER
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2818

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/763,345

Applicant(s)

VAN BROCKLIN ET AL.

Examiner

Dao H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 17-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>0104</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the communications dated 01/23/2004 through 11/30/2006.

Claims 1-28 are active in this application.

Acknowledges

2. Receipt is acknowledged of the following items from the Applicant.
 - a. Information Disclosure Statement (IDS) filed on 01/23/2004. The references cited on the PTOL 1449 form have been considered.

Applicant is requested to cite any relevant prior art if being aware on form PTO-1449 in accordance with the guidelines set for in M.P.E.P. 609.

- b. Applicant made a provisional election without traverse to prosecute the invention of Group I, claims 1-16, in the Response to Restriction Requirement filed 11/30/2006.

Claims 17-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected group there being no allowable generic or linking claim.

Applicant has the right to file a divisional application covering the subject matter of the non-elected claims.

Priority

3. In the specification filed 01/23/2004, Applicants intended to claim priority in part upon U.S. Application No. 10/437,522, filed 04/30/2003. However, the provided data was not consistent with PTO record. Particularly, Application No. 10/437,522 was not filed on 04/30/2003 but on 05/14/2003. In addition, the title of Application No. 10/437,522 was not the same as the provided title.

If applicant desires priority under 35 U.S.C. 120 based upon a previously filed copending application, appropriate correction and specific reference to the earlier filed application must be made in the instant application. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph. The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. _____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application. (2.15)

Specification

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4. The specification has been checked to the extent necessary to determine the presence of possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claim(s) 1-6 are rejected under 35 U. S. C. § 102 (b) as being anticipated by U.S. Patent No. 6,140,737 to Boie.**

Regarding claim 1, Boie discloses a method of driving a parallel-plate variable micro-electromechanical capacitor, shown in figs. 1, 2, comprising:

establishing a first charge differential (corresponding to the activated position; col. 2, lines 8-31; or a charge differential corresponding to the difference of the first voltage potential and the second voltage potential, col. 4, lines 61-65) across a first and a second conductive plate 12 of said variable capacitor wherein said first and

second conductive plates 12 are separated by a variable gap distance (corresponding to the activated position);

isolating said first and second plates for a first duration (corresponding to the activating time); and

decreasing said charge differential to a final charge differential (corresponding to the rest position; col. 2, lines 8-31) being less than said first charge differential and wherein said second charge differential corresponds to a second value of said variable gap distance (corresponding to the rest position). See further col. 2, line 64 to col. 3, line 38.

Regarding claim 2, Boie discloses the method further comprising isolating said first and second plates 12 for a second duration (corresponding to the rest time) after decreasing said charge differential.

Regarding claim 3, Boie discloses the method wherein isolating said first and second plates 12 for said second duration allows said first and second plates 12 to mechanically settle to said second value of said variable gap distance (corresponding to the rest position). See col. 2, lines 8-31.

Regarding claim 4, Boie discloses the method wherein establishing said first charge differential comprises coupling said first conductive plates 12 to a reference voltage source (first voltage signal/potential; col. 3, lines 15-19; col. 4, lines 61-64) and

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coupling said second conductive plate 12 to a clear voltage (second voltage signal/potential).

Regarding claim 5, Boie discloses the method, wherein said clear voltage comprises a second clear voltage coupled to said second conductive plate 12 and wherein decreasing said charge differential comprises coupling said first conductive plate to a first clear voltage (first voltage signal/potential).

Regarding claim 6, Boie discloses the method wherein said first charge differential causes an initial attractive force between said first and second conductive plates 12 that is larger than a second attractive force corresponding to said second value of said variable gap distance. See col. 1, lines 20-22; col. 3, lines 19-34)

Claim Rejections - 35 U.S.C. § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claim(s) 7-16 are rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,140,737 to Boie.**

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Regarding claim 7, Boie discloses the method comprising all claimed limitations, except for explicitly teaching that said parallel-plate variable MEM capacitor comprises a diffraction-based light modulation device.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the MEM capacitor of Boie could be used in or be adapted to various MEM devices, including diffraction-based light modulation device. This is just an intended use of the MEM capacitor.

Regarding claim 8, Boie discloses a method of driving a (diffraction-based light modulation) device, as shown in figs. 1, 2, comprising:

establishing a preliminary known charge state with respect to a first and a second conductive plate 12 (corresponding to the rest position; col. 2, lines 8-31) of a variable capacitor wherein said first and second conductive plates 12 are separated by a variable gap distance (corresponding to the rest position);

establishing a first charge differential across said first and second conductive plates 12 (corresponding to the activated position; col. 2, lines 8-31; or a charge differential corresponding to the difference of the first voltage potential and the second voltage potential, col. 4, lines 61-65) to force said first and second conductive plates toward each other;

isolating said first and second conductive plates for a first duration (corresponding to the activating time);

decreasing said charge differential to a second charge differential (corresponding to the rest position; col. 2, lines 8-31) being less than said first charge differential and wherein said second charge differential corresponds to a second value of said variable gap distance (corresponding to the rest position); and

isolating said variable capacitor for a second duration (corresponding to the rest time) to allow said first and second plates 12 to settle to said second value of said variable gap distance. See further col. 2, line 64 to col. 3, line 38.

Note that though Boie does not explicitly teach that said device comprises a diffraction-based light modulation device, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the MEM capacitor of Boie could be used in or be adapted to various MEM devices, including diffraction-based light modulation device. This is just an intended use of the MEM capacitor.

Regarding claim 9, Boie discloses the method wherein establishing said known charge state comprises coupling said first conductive plate to a first clear voltage (first voltage signal/potential; col. 3, lines 15-19; col. 4, lines 61-64) and coupling second conductive plate to a second clear voltage (second voltage signal/potential).

Regarding claims 10 and 11, Boie discloses the method comprising all claimed limitations. See col. 2, line 64 to col. 3, line 38.

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Regarding claim 12, Boie discloses the method wherein establishing said first charge differential comprises coupling said first conductive plate to an overdriven reference voltage source. See col. 2, lines 15-31.

Regarding claim 13, Boie discloses the method wherein decreasing said charge differential comprises removing a selected amount of charge from said first conductive plate (it would have been obvious that the MEM capacitor of Boie could be reset by various ways, including removing applied voltage from the plates 12).

Regarding claim 14, Boie discloses the method comprising all claimed limitations. See further the rejection of claim 13.

Regarding claim 15, Boie discloses the method wherein said variable capacitor is controlled by a voltage control circuit 20. See figs. 1-2.

Regarding claim 16, Boie discloses the method wherein said variable capacitor is controlled by a charge control circuit 20. See figs. 1, 2 and col. 2, lines 15-30; col. 3, lines 38-67.

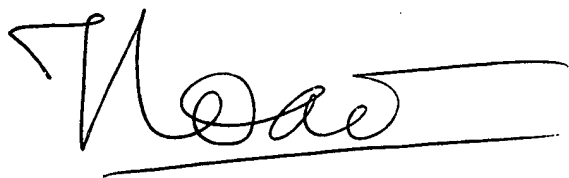
Conclusion

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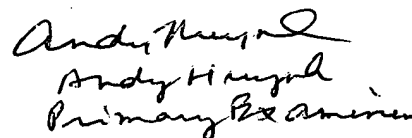
9. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dao H. Nguyen whose telephone number is (571)272-1791. The examiner can normally be reached on Monday-Friday, 9:00 AM – 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (571)272-1907. The fax numbers for all communication(s) is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1625.

A handwritten signature in black ink, appearing to read 'Dao', with a horizontal line drawn underneath it.

Dao H. Nguyen
Art Unit 2818
February 8, 2007

A handwritten signature in black ink, appearing to read 'Andy H. Nguyen', with the words 'Primary Examiner' written below it.